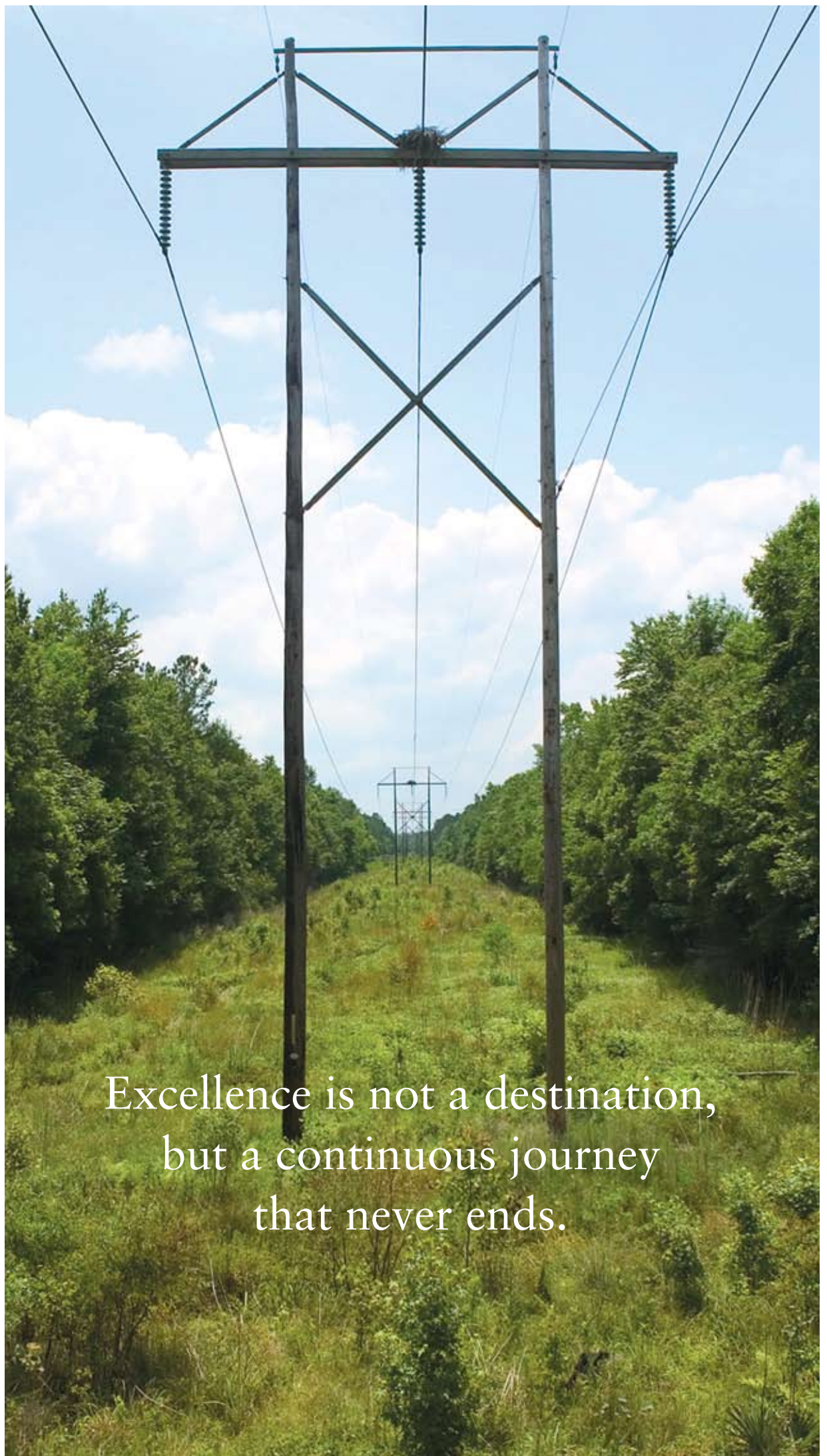


# journey

**SANTEE COOPER**  
2007 Environmental Report

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Excellence is not a destination,  
but a continuous journey  
that never ends.

## from the president & ceo

Freedom of choice is a powerful opportunity, and a freedom that many Americans take for granted. We don't think about all the choices we make each day that, added together, significantly impact our lives and our world.

Many of us make choices based on convenience and comfort. We choose to build larger homes with a lot of windows, plasma televisions, multiple cell phones and iPods. We choose to live in South Carolina, in growing numbers!

These choices demand electricity – more than 500 megawatts in additional generation that must be built for the Santee Cooper system by 2013. Santee Cooper is the state's largest producer of electricity, and we supply directly or indirectly nearly 2 million South Carolinians with low-cost, reliable power. We take our responsibility seriously. We have always balanced our role as power producer with that of environmental steward, and we are actively planning to meet the next generation of energy needs with a combination of renewable generation, traditional generation, conservation and energy efficiency programs.

You are holding Santee Cooper's environmental report for 2007, which allows us to group together, for the first time since our 1997 report, all of our environmental programs, policies, achievements and commitment for the future. It highlights many first-in-the-state efforts, such as our renewable energy program, our innovative research into wind energy and clean-coal technologies and our storied role in habitat development and protection of natural resources. In many ways, 2007 was a year of promises delivered – promises of new technology and applications that our research will help uncover, promises to redouble our own efforts in environmental stewardship and promises to continue offering our customers opportunities to conserve and realize efficiencies in their own energy consumption.

Conservation and efficiency are as important to us as generation in providing South Carolina's needed energy. They always have been – our protection of natural resources stems from our start as a hydroelectric plant dependant on Lake Moultrie for renewable energy. As we strive to balance the needs of the future – environmental and economic – we must stay true to our roots. Coal remains the nation's most abundant fuel source, and we know that national prosperity depends on all utilities, including ours, helping discover ways to make coal even cleaner. Santee Cooper has made clear choices to carry us forward. We will continue promoting conservation and employing renewable energy programs. We will continue our own support for clean-coal research. And we will continue to use the best proven environmental control technology in our own plants, always mindful of the balance between costs and benefits. Economically and environmentally, we will remain the state's leading resource for improving the quality of life across South Carolina.



Lonnie Carter  
President and CEO



Programmable thermostats help conserve electricity

## A YEAR OF LIVING GREENER

When our customers think “Santee Cooper,” they think environmental stewardship.

That fact – underscored by market research last summer – is important to Santee Cooper. We put a lot of time and energy into balancing our responsibility to generate low-cost, reliable power while protecting the world around us. We have environmental stewardship programs dating back more than 40 years, and we launched new ones in 2007. Many of these programs represent pioneering efforts in South Carolina.

In 2007, with so many environmental stewardship programs already in existence, and a demonstrated commitment to conservation, renewable energy and efficiency as we move forward, we realized we needed a group of employees solely focused on these issues at hand. In October, the Santee Cooper Board of Directors established a new Department of Conservation and Renewable Energy. Led by Vice President Marc Tye, this department of 32 employees is ensuring that Santee Cooper has the proper resources in place to give conservation efforts the attention, relevancy and focus they deserve.

That is important because by 2020, Santee Cooper intends to provide 40 percent of its electricity from non-greenhouse gas resources, biomass fuels, energy efficiency and conservation. We currently produce about 10 percent of electricity from such sources.

The demand for electricity continues to grow. We will meet that demand through a combination of renewable generation, conservation, energy efficiency and traditional generation. *Conservation and efficiency are as important to us as is generation in meeting South Carolina's needs.* Our board said it first in 1990, and they renewed that commitment in 2007.

### Santee Cooper Green

Santee Cooper Green is more than a name – it is everything we stand for as a water and electric utility. It is the umbrella for more than 20 existing conservation, renewable energy and efficiency programs. It is a 32-person department focused on two missions: helping Santee Cooper and its employees live green, and helping Santee Cooper's 2 million direct and indirect customers go green, conserve energy and save money.





*Top:* CFL bulbs use 75 percent less electricity.  
*Bottom:* Santee Cooper is involved in clean-coal research.

Through Santee Cooper Green, customers can take a free energy audit, apply for low-interest loans to help make homes more energy efficient, participate in recycling programs and learn about other Santee Cooper programs that help promote conservation and energy efficiency. They can also learn how Santee Cooper generates renewable Green Power, recycles its own byproducts, teaches green and lives green.

Visit [www.SanteeCooperGreen.com](http://www.SanteeCooperGreen.com) for more details. Then turn off that computer!

#### **Helping Customers See the Light on Conservation**

Santee Cooper controls approximately 650 megawatts of electricity through its varied programs encouraging customers to curtail their power consumption. That's about the same amount of electricity as one of the utility's largest units can generate, so it's already an impressive number. And it will grow significantly in the coming years as the utility brings on more programs and builds conservation and energy management awareness among customers. So much so, in fact, that we will be able to save

the equivalent of an additional power plant by 2020.

In 2007, as part of its efforts to live green, Santee Cooper replaced incandescent light bulbs in its offices and generating stations with energy-efficient compact fluorescent (CFL) bulbs. Santee Cooper has promoted the benefits of CFLs since 2006, when the utility distributed 4,000 bulbs to its own customers and partnered with The Electric Cooperatives of South Carolina to jointly hand out another 60,000 bulbs. Santee Cooper also promoted light-emitting diode (LED) bulbs – which are even more efficient than CFLs, but are also newer and more expensive – during the holidays. The utility gave away a strand of LED holiday lights to each customer who signed up to purchase the utility's renewable Green Power.

On Earth Day 2008, Santee Cooper is launching one of the most ambitious CFL promotions in South Carolina, a \$2.7 million initiative that will give residential customers a dozen CFL bulbs each. A CFL uses about 75 percent less electricity than an incandescent bulb and lasts longer.

“Our message is simple: saving energy is

as easy as changing a light bulb,” said Tye. “We have to change habits to build real energy conservation. Once our customers try CFL bulbs, we think the energy-efficient light will go on for them and they'll look for additional ways to conserve. That helps them, it helps us and it helps our environment.”

#### **Leading the Way on Clean Coal Research**

Santee Cooper is committed to maximizing the potential of our country's most abundant and efficient energy resource – coal, which fuels about half of America's power.

In May, we announced a multimillion-dollar research initiative at the University of South Carolina, the first of its kind in the state. Teaming with The Electric Cooperatives of South Carolina, we donated \$5 million to create a research center focused on clean-coal technology that could reduce carbon emissions associated with coal. Goals are to accelerate research in environmental control technology; serve as a catalyst for spin-off companies to market the new technology; and protect the environment by reducing carbon,

mercury and acid emissions while meeting an escalating demand for affordable electricity.

Our nation's economic vitality depends on continued improvements in clean coal-burning generation, and we are excited to be part of the solution.

#### **Powering the Future**

Santee Cooper worked with South Carolina Electric and Gas Co. in 2007 to investigate expanding our nuclear generation, and we are continuing that process. Nuclear generation emits no greenhouse gases, and streamlined permitting processes, stellar safety records, and growing concerns over climate change have prompted utilities to reconsider what has been a dormant industry for several decades. It will take time, however. Escalating construction costs have emerged as a near-term obstacle, but we remain confident that nuclear expansion will help us meet future energy demands.

Meanwhile, we face an immediate need for more than 500 additional megawatts of electricity by 2013. We plan to meet the



Santee Cooper is part owner of the V. C. Summer Nuclear Station

## I. how santee cooper helps others go **green**

immediate base load energy need with our Pee Dee Energy Campus, which will be built with the best available environmental control technology. More than 30 percent of the plant cost, in fact, will be for scrubbers and other equipment to help minimize the plant’s impact on the environment. The plant will burn less coal and reduce sulfur dioxide emissions by more than 98 percent, nitrogen oxide by more than 90 percent, mercury by more than 92 percent, and particulate matter by 99 percent.

Santee Cooper retrofits existing generating units with improved environmental control technology too. That combination – building new plants with advanced technology, plus installing better environmental controls on existing equipment – has caused a significant drop in emissions while the utility actually increased its generation. Since 2000, annual generation as measured by gigawatt hours increased 20 percent, while mercury emissions decreased 56 percent, sulfur dioxide emissions dropped 26 percent and nitrogen oxide emissions, 60 percent.

Utilizing the best available environmental

control technology, the Pee Dee campus will help provide affordable, reliable base load generation that will ensure continued prosperity for the state, its people and its environment.

### **Power From the People**

In October, we launched an exciting residential program that pays customers to make power for us. Not just any power – renewable power. We will buy power from customers who have solar panels or other renewable generation if they generate more power than they need and get that excess electricity to our grid.

We call this net billing program Green Energy Buy Backs. It’s the first one of its kind in the state, and for a limited time, we’ll even offer interest-free loans to customers who want to purchase solar panels or other qualified equipment to get started.





### ***Utility’s ties to land, water run deep***

*Since acquiring 171,000 acres of land to construct the Santee Cooper Hydroelectric and Navigation Project, Santee Cooper has been inextricably tied to the land and its ecosystems. Through the decades, the utility has continually strived to dedicate resources that protect and enhance the lands and waterways entrusted to it.*

#### **Wildlife Habitat Management**

Santee Cooper’s 4,569 miles of electrical transmission lines do more than carry current to every corner of the state. They also provide friendly settings for utility-protected wildlife habitats.

Santee Cooper has nurtured wildlife habitats on the thousands of acres of ecosystems beneath its power lines for 13 years.

In 1995, Santee Cooper was one of only a handful of electric utilities in on the ground floor of Project Habitat, a nationwide program sponsored by a large herbicide manufacturer. Herbicides today are vastly different from products utilities used decades ago. A key component is that they use chemicals that work on enzymes present only in plants, not in animals or humans.

Precise application of low-volume herbicides, for example, can benefit flora and fauna. These herbicides control fast-growing trees and simultaneously encourage the growth of plants and flowers favored by wildlife. Targeting troublesome vegetation lets beneficial grasses and shrubs grow, thus creating space for wildflowers and butterflies to thrive and for small mammals and birds to feed, nest and hide from predators.

Organizations such as Quail Unlimited, the National Wild Turkey Federation, Buckmasters, Butterfly Lovers International and the Quality Deer Management Association have endorsed Project Habitat.

The utility’s involvement with Project Habitat served as a springboard for an alliance



with POWER for Wildlife, a South Carolina-based organization taking the concept to the people. POWER for Wildlife is funded by electric utilities, including Santee Cooper.

Landowners who lease suitable property underneath power lines to a utility are eligible to receive grants up to \$1,000 for a multiyear commitment to follow wildlife practices outlined in a management plan. There are currently 1,800 acres of Santee Cooper rights of way in POWER for Wildlife.

In 2007, Right of Way Management continued to actively promote POWER for Wildlife and the five-year plan landowners commit to after being accepted into the program. Santee Cooper makes applications available to landowners and administers the process which culminates in the utility issuing a grant check. POWER for Wildlife is an important component of Right of Way Management, whose overall objectives are to:

- Comply with national North American Reliability Council standards
- Ensure that undesirable woody-vegetation growth does not interfere with the inspections and maintenance of transmission facilities by line personnel
- Utilize corporately supported computer software to ensure that all maintenance systems are scheduled and completed as designed
- Ensure that annual maintenance-production totals are compatible with established maintenance cycles
- Promote a positive public image

#### **Creating Sanctuaries for Wildlife**

Santee Cooper and the S.C. Department of Natural Resources (DNR) have a long history of working together to manage the lakes and the properties that surround the state’s largest freshwater resource.

One example is fisheries management, through stocking activities and the annual fish passage. Every spring, the Pinopolis Lock at the Jefferies Hydroelectric Station on Lake





Moultrie is opened several times daily to allow spawning species to enter the lake.

The establishment of wildlife management areas on both lakes greatly enhances the resource. Lake Moultrie is home to the Hatchery Wildlife Management Area and the Sandy Beach Waterfowl Management Area; Eutaw Springs, Duck Pond and Santee Cooper wildlife management areas are around Lake Marion. Santee Cooper leases the property to DNR, and DNR oversees the management operations.

The Santee National Wildlife Refuge, established in 1941, comprises 15,095 acres in Clarendon County. Of this acreage, 4,400 acres are owned by the U.S. Fish and Wildlife Service with the remaining acreage managed under a lease between the federal government and Santee Cooper.

During the winter, ducks, geese and swans call it home. It's also a nesting and "stopover area" for birds, hawks, eagles, shore birds and wading birds. The endangered red-cockaded woodpecker, the threatened bald eagle and the American alligator can be found here. Numerous other species of flora and fauna are indigenous to the refuge.

#### **Forestry**

Santee Cooper manages 23,567 acres of forest land around the lakes in Berkeley, Calhoun, Clarendon, Orangeburg and Sumter counties.

There are also 2,700 acres in Florence County and 1,000 acres in Jasper County for potential use as generating stations.

Wooded lands are managed according to generally accepted forest practices, including planting, thinning and harvesting. Two years ago, Santee Cooper planted approximately 50 acres of trees. Harvesting has averaged approximately 600 acres over the last several years. About 10 cords is the yield during typical thinning operations. In 2007, 600 acres were harvested and that amount is projected in 2008.



Santee Cooper closely cooperates with DNR on harvesting activities within a Wildlife Management Area. Two recent planned harvests came as direct requests from DNR to enhance the wildlife habitat on those areas.

#### **Lakes and Vector Management**

Protecting lakes Marion and Moultrie, South Carolina's largest freshwater resource, has always been of paramount importance to Santee Cooper since the reservoirs were completed in 1942.

With a combined 160,000 acres in five counties, the lakes host 48 water-quality monitoring stations. Monthly samples are analyzed by Santee Cooper's analytical and biological services department and data is shared with numerous state and federal agencies.

Maintaining water quality is important because since October 1994, the Santee Cooper Regional Water System, capable of providing up to 36 million gallons of water per day (mgd), has depended on Lake Moultrie as its water source. Four Lowcountry water utilities and 125,000 consumers in Berkeley and Dorchester counties count on this resource.

The Lake Marion Regional Water System, with a treatment plant located near Santee, S.C., will be completed in 2008. Santee Cooper will also operate this treatment plant, which will be the source of water for several utilities in Berkeley, Clarendon, Dorchester, Orangeburg and Sumter counties.

In addition to serving as a source for drinking water, the lakes also are a tremendous resource for tourism, the state's largest industry. About 60 fishing guides work the lakes, which are home to the world's first landlocked striped bass fishery. In a quirk of nature, the striped bass or rockfish became trapped in the lakes after the dams were finished.

It was thought these now-confined migratory fish would soon die off. But to the astonishment of biologists, they began reproducing-and produced a world record catch in the





1960s. Other species, including the Arkansas blue catfish and crappie, are also prized by anglers, who come from far and wide to fish the Santee Cooper Lakes, creating a real economic boost for the local communities.

The lakes can also be a draw for less desirable visitors. Controlling mosquitoes, which can carry malaria, has been a cornerstone of Santee Cooper’s environmental outreach since the beginning of the Santee Cooper project.

At the time the lakes were in the planning stages, malaria was a deadly disease in South Carolina, claiming 450 lives in 1937. Fully one-third of these deaths came from Berkeley, Calhoun, Georgetown, Horry and Orangeburg counties. Today, the disease is nonexistent in these areas, largely due to the methods employed by Santee Cooper in constructing the lakes.

Santee Cooper’s vector management department still battles mosquitoes, in an environmentally friendly way. In 2007, the department’s 11 employees traveled door to door through lake-area subdivisions, searching for potential breeding grounds and educating homeowners about techniques that discourage breeding. “What we do is identify where the mosquitoes and their breeding grounds are, and we go after them,” explained Vector Management Supervisor John Grant.

Vector Management also sets and inspects light traps loaded with carbon dioxide or “dry ice,” which attracts mosquitoes. Technical associates routinely check the traps, and selected specimens end up under a microscope. This helps the department determine when and where to spray, using approved and environmentally friendly methods.

#### **Palmetto Trail**

Santee Cooper helped blaze South Carolina’s Palmetto Trail, a planned 162-mile long hiking, biking and camping pathway from the mountains to the sea.

The trail’s first segment opened in January 1996. The 24-mile long Lake Moultrie Passage created widespread access for hikers and cyclists to some of the most beautiful

vistas around the lake it edges. Forming a rough semicircle around a portion of Santee Cooper’s “lower lake,” it features several primitive campsites and hand-operated water pumps for thirsty trail goers. It is one of three sections that Santee Cooper helped build and continues to maintain.

The other sections include the 20-mile long Eutaw Springs Passage and the 33-mile long Lake Marion Passage. Santee Cooper is also involved in the High Hills of the Santee Passage, a 9-mile long route that touches on upper Lake Marion and features a visitor center that was dedicated in March 2008.

Joseph Stephens is Santee Cooper’s supervisor of forestry and undeveloped lands, and he has been involved in designing and building all three passages that cross property belonging to the state’s largest electric utility. “Those three passages are vital links in the overall Palmetto Trail,” Stephens said. “The entire trail presents a terrific opportunity for people to get out and enjoy the world around us. We are committed to keeping our piece of this resource accessible to nature-lovers everywhere.”

#### **Old Santee Canal Park**

The Old Santee Canal Park commemorates the beginning or end point (depending on which direction you were going) of the Santee Canal, America’s first summit canal.

Constructed from 1793 to 1800, the privately financed waterway first connected the Santee and Cooper rivers. The 22-mile long canal and its 10 locks was a precursor of the Santee Cooper Hydroelectric and Navigation Project.

The 195-acre park, whose construction was financed by Santee Cooper, opened in 1989. It features an interpretive center, theater and a new classroom that can now accommodate larger groups.

The park features two miles of boardwalk and hiking trails along Biggin Creek that parallel the Tailrace Canal. A large floating dock is inviting to boaters. The Stony Landing House, circa 1843, provides a scenic overlook at the point where the west branch of the Cooper River begins.





In 2007, the park expanded its environmental outreach by hiring an education coordinator focused on environmental programs, which has allowed the park to improve its programming. School children across the Lowcountry enjoy outings such as “Nature on the Go,” essentially an abbreviated school field trip described as “taking the park to the school.” The park’s environmental programs emphasize the vast diversity of plant and animal life found throughout the park, covering topics such as insects, reptiles, trees and wetlands.

Park programs meet state education standards that are tailored to elementary and middle school students. Other Old Santee Canal educational programs examine the wide range of historical events that took place on or around Stony Landing House, such as children’s life, archaeology and canal history.

Inside the park is the Berkeley County Museum and Heritage Center. On the museum property is the restored Whitesville schoolhouse, owned by the Berkeley County Historical Society.

#### **Waccamaw Neck Bikeway**

Santee Cooper has been a long-time partner in the construction of the Waccamaw Neck Bikeway project, a planned 27-mile paved biking path that is about halfway complete. The most recent three-mile segment, through Huntington Beach State Park, opened in May 2007.

The bikeway is located in Georgetown County and will eventually stretch from Murrells Inlet to Hobcaw Barony and connect major attractions including Huntington Beach, Brookgreen Gardens and county beaches. The Hobcaw area is comprised of the University of South Carolina’s Belle W. Baruch Institute for Marine & Coastal Research and Clemson University’s Belle W. Baruch Institute of Coastal Ecology and Forest Science.

For its part, Santee Cooper has provided critical access to a transmission right of way that will constitute a major part of the Bikeway’s home stretch from Pawleys Island to DeBordieu.

“We have been partners with Santee Cooper from the beginning, and they’ve always said, ‘When you need an encroachment permit on one of our easements, it’s yours,’” said Linda Ketron, one of the key volunteers involved in creating the Bikeway.



### ***Energizing Teachers About Solar Power, Energy and Environment***

Santee Cooper is supportive of public education in South Carolina, and even sponsors seminars to help classroom teachers who teach students about electricity and renewable energy.

In 2007, Santee Cooper began training teachers in all five of the Green Power Solar Schools announced that year, offering two-day training sessions for teachers who are implementing the specially designed curriculum. Santee Cooper contracted with science curriculum specialists to build a Solar Schools curriculum that meets state standards for sixth-grade science. Teachers leave the sessions equipped with science curriculum kits provided by the state’s electric cooperatives, kits that help them apply their knowledge about renewable energy as hands-on activities for their students. Kits include lab materials for topics like energy and machines, heat energy, energy transformation and alternative energy.

“I’m excited to be a part of our company’s overall goal of energy conservation and awareness,” said Barbara Allen, director of educational programs. “The kit has been an asset because the hands-on learning activities are able to communicate the concepts of renewable energy and conservation to the students.”

Santee Cooper also offers its summer Energy Educators Institute. Now in its 20th year, it provides an opportunity for teachers to earn graduate credit and receive planning materials. Each session consists of presentations led by specialists, hands-on learning activities and field trips.

Teachers are able to network and develop standards-based lesson plans relevant to the curriculum, and Santee Cooper employees address topics such as power generation, transmission, distribution, electrical safety, water quality, utility economics, energy efficiency and conservation, renewable energy and environmental resources.





## ***Partnerships***

*Santee Cooper recognizes that we accomplish more working together than any of us do on our own. In 2007 we partnered with many local, state and national organizations involved in environmental stewardship, from preservation and recycling to research and development. Here is a partial list:*

American Coal Ash Association  
American Council on Renewable Energy  
Belle W. Baruch Institute of Coastal Ecology and Forest Science  
Berkeley County Kids Who Care About Our Environment  
Berkeley Soil & Water Conservation District  
Calhoun Soil & Water Conservation District  
Carolina Recycling Association  
Carolinas Air Pollution Control Assoc.  
Center for Hydrogen Research  
Charleston Chamber of Commerce Innovation/Alternative Energy Summit  
Charleston Soil & Water Conservation District  
City of Myrtle Beach GreenKeepers  
Clarendon County Chamber/Striped Bass Festival  
Clarendon Soil & Water Conservation District  
Clemson University Institute for Energy Studies  
Coal Ash Consortium  
Coastal Carolina University Burroughs & Chapin Center for Marine and Wetland Studies  
Coastal Conservation League  
Clarendon County Chamber Fishing Tournaments  
EPA Coal Combustion Products Partnership  
EPA Landfill Methane Outreach Program  
Friends of Santee National Wildlife Refuge  
Georgetown Soil & Water Conservation District  
Horry Soil & Water Conservation District  
Lord Berkeley Conservation Trust  
National Wild Turkey Federation  
Old Santee Canal Park  
Palmetto Conservation Foundation  
Pee Dee River Coalition  
POWER for Wildlife  
Robert M. Cooper 4-H Leadership Center  
Santee Birding and Nature Festival  
Savannah River National Laboratory  
South Carolina Aquarium/Conservation Awards  
South Carolina Environmental Excellence Program  
South Carolina Forestry Association  
South Carolina Sea Grant Consortium  
South Carolina Timber Producers Association  
St. Stephen Catfish Festival  
The Big Green Bus Tour (Trident United Way)  
U.S. Green Building Council  
Wildlife Action, Inc.

## 2. how santee cooper lives

# green





## Renewable Power Growing at Santee Cooper

### EDITOR’S NOTE

*In the beginning, Santee Cooper was a hydroelectric power company, generating electricity from its just-built dam system on Lake Moultrie beginning in 1942. Hydroelectricity is perhaps the original renewable energy, and it remains an important part of Santee Cooper’s mix, with a capacity of 130 megawatts at its Jefferies Generating Station and the Santee Spillway, 84 megawatts under its management at St. Stephen and 15 megawatts at Buzzard Roost, which Santee Cooper began operating in 2007. Opportunities for new hydroelectric power are limited by Mother Nature, and so Santee Cooper has instead looked to alternative energy sources to expand its renewable portfolio.*

*Santee Cooper became the first utility in South Carolina to produce and sell nationally certified Green Power when we powered up our first landfill gas-to-electricity unit at Horry County Landfill in 2001.*

*Last year, Santee Cooper’s renewable energy program made tremendous gains on existing fronts, began exploring wind energy resources along the coast and laid plans to be the first utility in South Carolina to tap into the power of biomass, with announcements likely in 2008 for new biomass generation.*

*Santee Cooper customers responded, too, purchasing nearly \$600,000 in Green Power – a 25 percent increase over Green Power sales in 2006 and enough to push total Green Power sales solidly over the \$2 million mark. Every dollar generated through Green Power sales is reinvested in new or expanded renewable energy programs.*

### From Trash to Treasure: Santee Cooper’s landfill-based energy program to expand

October marked a leap forward in Santee Cooper’s Green Power renewable energy program, when the utility announced a new contract for landfill gas generation in George-



town County and began negotiations with other vendors that could double the utility’s capacity in this area.

In September 2001, Santee Cooper became the first electric utility in the state to generate and offer Green Power to its customers, launching into commercial operation its 3.3-megawatt Horry County Generating Station.

Landfill generating sites literally use garbage to make energy, making the world a cleaner and healthier place for all of us. Since that pioneering moment in 2001, Santee Cooper has also installed 5.4 megawatts at the Lee County Landfill and a 5.5-megawatt unit at the Richland County Landfill.

The methane gas from decaying garbage is considered renewable because it is created though the natural decomposition of organic materials. Methane gas is a greenhouse gas and can be problematic for landfills. Landfill gas collection systems feeding the Santee Cooper Green Power turbines capture the gas instead of venting it into the atmosphere — or flaring it — as occurs at most landfills.

“Santee Cooper continually looks for ways to expand our Green Power program, and the landfill generating stations provide an alternative source of power and diversify our fuel mix,” said Lonnie Carter, president and chief executive officer.

In October, Carter and Georgetown County Councilman Sel Hemingway announced a new landfill gas generation contract involving the Georgetown County Landfill. That plant is expected to open in 2009, and Santee Cooper is now working to identify other landfills that could provide commercial-scale methane gas as fuel for new units.

“Santee Cooper is aiming to double our online capacity of the landfill generating stations in the next couple of years,” said Elizabeth Kress, principal engineer. “We have already announced our plans for Georgetown, and we expect to announce soon three other locations where we are negotiating to install generation.”





### **Sunny Days Ahead for School-based Solar Projects**

Solar energy is a clean, promising source of electricity for South Carolina, and Santee Cooper launched an ambitious program in spring 2007 designed to teach school children more about the opportunities and limitations associated with this renewable power source.

Santee Cooper is developing Green Power Solar Schools in partnership with local electric cooperatives, and within a couple of years the program will include one Solar School in each of the 20 electric cooperative territories. Each Green Power Solar School receives a 2-kilowatt solar panel, which is connected to an interactive online program allowing for real-time monitoring of the panel's electric output. The first panel was dedicated in April at Hilton Head Middle School, and there are now five Green Power Solar Schools plus a sixth installation at Santee Cooper's Wampee Conference Center in Pinopolis.

Key to the program is a new renewable energy curriculum, targeted to sixth-grade science classes and developed in accordance with the state's education standards.

Each solar unit is supplemented by an Internet-based monitoring system that provides real-time access to information regarding the panel's performance. Students can compare performance of panels positioned at their schools and at dozens of schools across the nation. The local electric co-op supplies classroom kits to Solar Schools and Santee Cooper hosts a two-day seminar to work with science teachers on creative applications.

"Santee Cooper plans to expand the Solar Schools program in 2008 by adding at least eight schools," said Elizabeth Kress, principal engineer. "That will more than double the scope of our Solar Schools program, and will bring the curriculum's lessons to thousands more students and their families."

Santee Cooper's solar energy education efforts extend beyond middle school. The utility installed and is receiving electricity from a 16-kilowatt solar array at Coastal Carolina



University. In addition, Santee Cooper donated solar panels to Clemson University and the University of South Carolina, generating 15 kilowatts and 25 kilowatts respectively. Clemson and USC use this energy to help meet campus needs.

### **Energy Answers Blowing in the Wind**

By partnering with Clemson and Coastal Carolina universities in researching wind power options in 2007, Santee Cooper again demonstrated its commitment to environmentally friendly, renewable energy sources for its customers.

The research projects are a year in scope, and they will document and measure wind speed along the coast of South Carolina. Wind power is renewable energy that is virtually emissions-free. Development of large-scale wind power in South Carolina will be dependent on public outreach and research like the Santee Cooper projects. Santee Cooper is the only utility in South Carolina actively evaluating wind energy.

May 2007 marked the beginning of the first study, with the erection of an anemometer on Waties Island in Horry County. Clemson and Coastal Carolina are both involved in that study. The second study involves an anemometer at the Clemson University Restoration Institute in North Charleston. The third project, announced in August, is another partnership with Clemson at the Belle W. Baruch Institute of Coastal Ecology and Forest Science in Georgetown County.

"Santee Cooper is closely following the results from these wind research projects," said R.M. Singletary, senior vice president of corporate services. "We remain committed to exploring all viable options for renewable power generation in South Carolina, and we are hopeful that these three studies will support a wind generation program for us."





### ***Santee Cooper Expands Alternative Fuel Capacity***

In December 2007, President Bush signed the Energy Independence and Security Act that, among other things, calls for at least 36 billion gallons of ethanol to be used annually across the nation by 2022.

In that same month, Santee Cooper completed the installation of a 4,000-gallon E85 tank at its Moncks Corner Office, quadrupling its storage capacity of the flexible fuel that now powers more than a quarter of the utility's light-vehicle fleet. Santee Cooper first embraced this renewable fuel in 2001, when it began purchasing flex-fuel vehicles and installed 1,000-gallon tanks at three locations.

E85 is an alternative fuel comprised of 85 percent ethanol and 15 percent unleaded gasoline. Ethanol is a renewable fuel made from agricultural crops like corn or soybeans; it's used in flexible-fuel or "flex-fuel" vehicles, of which there are an estimated 6 million on U.S. roads today. Federal regulations govern Santee Cooper's continuing purchase of alternative fuel vehicles.

Since 2001, Santee Cooper has added more than 135 flex-fuel vehicles to its fleet, ranging from sedans and minivans to SUVs and half-ton trucks. Since 2002, the utility has burned 177,000 gallons of B-20 bio-diesel in heavy-duty fleets.

At one time the utility operated three of the first four E85 fueling stations in South Carolina, including the Moncks Corner location and two sites in Myrtle Beach.

Looking to the future, Santee Cooper also is supporting the development of hybrid technology in automobiles through its partnership with the Plug-In Hybrid Coalition of the Carolinas.

"Santee Cooper has shown for years that it is willing to support alternative energy solutions. Our enthusiastic implementation of E85 is just another example of our environmental leadership in South Carolina," said R.M. Singletary, senior vice president of corporate services.



### ***EMS Heralded New Era at Santee Cooper***

Implementation of Santee Cooper's Environmental Management System, or EMS, in late 2006 ushered in a fresh approach to how the utility applies its long-standing environmental ethic. A year later, the system is drawing rave reviews from staff and independent auditors.

The EMS, developed by Santee Cooper staff, represents part of a \$4.5 million agreement between the utility, the Environmental Protection Agency and the S.C. Department of Health and Environmental Control. It is comprised of policies and procedures that manage today's complex web of environmental requirements, guide Santee Cooper toward continued improvement in environmental performance, and serve as a constant reminder for employees to consider the environmental consequences of their actions. The EMS applies to Santee Cooper's four coal-fired generating stations: Cross, Grainger, Jefferies and Winyah.

"The EMS built upon Santee Cooper's strong environmental record by helping us improve environmental compliance and performance," said Jay Hudson, manager of environmental management and chairman of the corporate EMS committee. "It assists us with integrating environmental compliance into business operations and planning decisions."

A procedure in the EMS manual, for example, requires a detailed environmental review whenever generating station upgrades or other changes are planned that could potentially alter emission levels. Routine audits are also conducted to measure ongoing compliance with environmental requirements and EMS procedures. In the fall of 2007, independent auditor ICF International Inc. praised Santee Cooper for its EMS implementation and support.

"The station personnel have really done a good job with this," said Brian Holmes, EMS director. "ICF was very impressed in comparing us to what other utilities are doing, especially with our renewable Green Power production and corporate recycling. As with





anything like this, there are areas to improve on, and I think we’ve made a tremendous start.”

The agreement with DHEC and the EPA provided for other environmentally beneficial projects completed in 2007:

- The installation of a 25.6-kilovolt photovoltaic solar array beside the Solomon Blatt Physical Education Center at the University of South Carolina. The array is connected to the USC electric grid. An interactive kiosk inside the PE center describes the system and its operation and performance monitoring information is available on the Internet.
- The installation of a 15-kilowatt photovoltaic array on the Fluor-Daniel Innovation Building at Clemson University. The system has a Web-based, energy-monitoring system accessible to the public that displays real-time and historical information with a dedicated Web site.
- Changing out 1,114 50-watt incandescent exit signs at the Medical University of South Carolina. They were replaced with light-emitting diode or LED exit signs.
- The Clean Diesel School Bus Retrofit Project involved retrofitting the engines of nearly 150 public school buses in Greenville, Lexington, Richland and York counties with emission-control equipment. The equipment is designed to reduce emissions of particulate matter and/or ozone precursors.



### ***2007 Environmental Interns Fielded Nature’s Lessons***

Each year, South Carolina lawmakers select 10 rising college juniors and seniors to participate in Santee Cooper’s Environmental Intern Program. Over the course of 10 weeks, the interns rotate through seven departments to gain a better understanding of Santee Cooper’s complex environmental operations.

“This program teaches some of South Carolina’s best students about how power generation and environmental stewardship are linked at Santee Cooper,” said Cecile Spivey, senior community relations representative. “They get to work in the field with professionals committed to environmental leadership and carry their experiences with them as they continue their studies.”

Interns help with air quality testing, data entry and research needs. They collect water samples on Lake Moultrie and then conduct laboratory testing. The interns test collected mosquitoes for West Nile Virus and other diseases. And they lend a hand with efforts to create new wildlife habitats in right of way areas beneath electrical transmission lines.

The 2007 interns exercised their creative flair by enhancing the Santee Cooper GOFER Kids website promoting recycling motor oil. The interns also met with environmental professionals and helped install new Spill Prevention Control and Countermeasures plans at applicable Santee Cooper substations.

The 2007 interns studied recycling patterns for Investment Recovery and concluded that Santee Cooper’s recycling results have improved since the utility began a renewed focus on employee recycling last year.

Finally, they became teachers to other, younger students during their Property Management rotation. The interns served as camp counselors for day camps at Old Santee Canal Park, educating children about the environment and how to preserve it.





# **One Million Tons and Growing... Santee Cooper’s Recycling Success**

*Santee Cooper recycled more than 1 million tons of materials in 2007, besting its corporate goal of 750,000 tons by more than 35 percent, conserving landfill space and converting much of that recycled tonnage into useful products that create jobs and build communities. The utility emphasizes recycling of office paper, aluminum cans and other traditional items, and it also aggressively recycles scrap metal and combustion byproducts.*

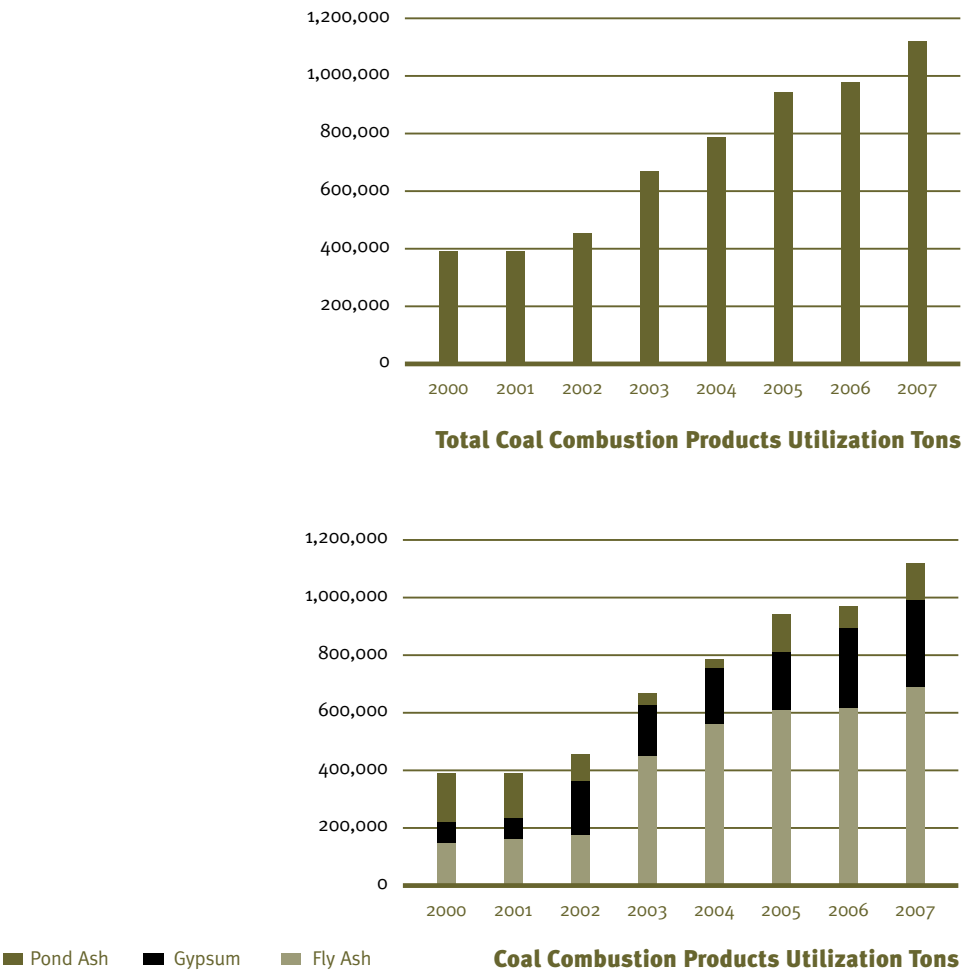
## **Recycled Byproducts: Building Blocks for Business, Community**

Santee Cooper has taken the old adage of “turning lemons into lemonade” by recycling combustion byproducts like fly ash and gypsum and by converting used motor oil collected statewide into electricity.

Begun more than 30 years ago, Santee Cooper’s combustion byproducts recycling program has been an economic and environmental success. In one high-profile example, contractors blended more than 30,000 tons of fly ash into the 300,000 cubic yards of concrete used in the recent construction of the Arthur Ravenel Jr. Bridge.

“We recycled 1,106,023 tons of combustion products in 2007,” said Tommy Edens, Santee Cooper’s administrator of combustion products utilization. “That means 88 percent of our ash byproduct and 70 percent of our gypsum byproduct was put to good use.”

Turning these ashes into assets has caught the attention of the U.S. Environmental Protection Agency’s Coal Combustion Products Partnership, which awarded Santee Cooper first-place honors in the Enhanced Utilization category at the 2006 National Recycling Coalition’s annual congress in Atlanta. The award recognized Santee Cooper’s increased utilization of its combustion byproducts, a number that has grown by 354,835 tons since 2004.



The majority of Santee Cooper’s generation mix — approximately 83 percent — comes from coal-fired generation. Burning the coal produces ash, and for the longest time electric utilities typically deposited the byproduct in an ash pond adjacent to the generating station.

But in late 1974, Santee Cooper began supplying fly ash from its Jefferies Generating Station near Moncks Corner to the Santee Cement Co. in Holly Hill. The next decade, Santee Cooper began supplying SEFA Group, formerly Southeastern Fly Ash, with ash that SEFA burns excess carbon from and supplies to the redi-mix industry. The ash can be used in the manufacturing of things like cement and concrete products, for use in the construction of homes, schools and businesses throughout the Southeast.

Santee Cooper now concentrates its ash recycling activities to its largest plants, the Winyah Generating Station near Georgetown and the Cross Generating Station in Pin-ville. Over time, the combustion process at the Cross and Winyah generating stations was modified to also allow for the production of synthetic gypsum, a key ingredient for building materials.

So successful was this new recycling program that American Gypsum entered into a long-term supply agreement with Santee Cooper and broke ground in 2006 on a \$125 million wallboard plant adjacent to the Winyah Generating Station. The fifth largest producer of gypsum wallboard, American Gypsum is expected to use between 550,000 to 660,000 tons of gypsum annually and create approximately 100 direct and 200 indirect jobs.

“This partnership represents an environmental and economical boom for Georgetown County and South Carolina,” said Lonnie Carter, Santee Cooper president and chief executive officer. “Creating jobs through recycling is a win-win situation.”





### It Started With GOFER

Santee Cooper’s 18-year-old Give Oil for Energy Recovery, or GOFER, program is the state’s largest do-it-yourself used motor oil collection program.

Santee Cooper collected 1,659,229 gallons of used motor oil in 2007 and safely converted it to electricity, representing 16,884,314 kilowatt-hours of power with a savings of more than \$1,140,822 in fuel costs.

“GOFER is such a positive environmental story for South Carolina because until the program came along, the public had few, if any, real options to properly dispose of used oil,” said Carter. “One gallon of used motor oil has the potential to contaminate 1 million gallons of freshwater, but the GOFER program enables Santee Cooper to collect that oil and safely convert it into energy.”

The program was piloted in April 1990 as a way to observe the 20th anniversary of Earth Day. On July 30, 1990, three dedicated collection sites were installed near Santee Cooper facilities in Moncks Corner and Georgetown, and GOFER went statewide the following year. There are now 497 do-it-yourself GOFER collection sites and approximately 750 industrial GOFER collection sites in South Carolina.

“I would say Santee Cooper provided a solution for proper used oil disposal in South Carolina,” said Jay Hudson, manager of environmental management, who served as Santee Cooper’s first GOFER supervisor. “The biggest benefit has been to the public, providing a safe and convenient way to dispose of used oil. That didn’t exist before.”

As such, the pioneering program has won several environmental awards, but Hudson called that icing on the cake. “It’s nice to win awards, but the nice thing is that the program has shown how we’ve worked with state government and county governments to meet a need. Most GOFER tanks are located at county recycling centers, which were just getting started when GOFER came along. We’ve developed along with them.”



### Utility Expands Traditional Recycling Program in 2007

At Santee Cooper, recycling matters. Each month, the state-owned utility recycles 5,940 aluminum cans, 2,633 plastic bottles and more than 13,000 pounds of office paper and 4,600 pounds of newspapers/magazines.

Although Santee Cooper has recycled office waste for years, the utility expanded its program in 2007 to increase the number of items recycled. Investment Recovery worked throughout the year to increase employees’ awareness of recycling by speaking at staff meetings, promoting through the company newsletter and creating recycling labels for collection containers. Recycling convenience centers were added for employees to easily recycle aluminum cans, plastic bottles, magazines and newspapers on a daily basis.

The stepped-up efforts have paid off. In 2006, Santee Cooper’s environmental interns performed a trash audit at the Moncks Corner headquarters and found that 40 percent of what employees threw away could have been recycled. The audit was conducted again in the summer of 2007 and showed that in less than four months the amount of recyclables that employees threw away had dropped by more than 15 percent.

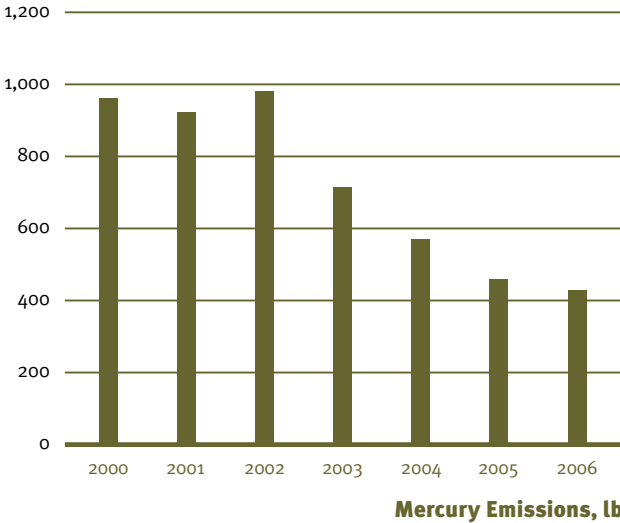
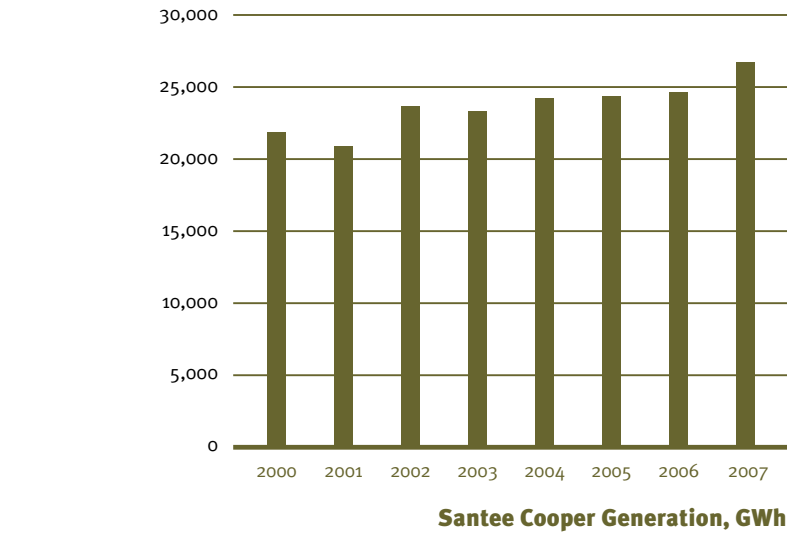
In addition to recycling, Investment Recovery’s Recycle Center collects all of the line crew recyclables for separating into steel, aluminum and copper and selling to the respective markets. Santee Cooper also benefits by being able to recycle and reuse materials like “pole-top” hardware, which is refurbished and returned to the warehouse for re-issuance.

Investment Recovery Agent Aurelia Smith said that she is pleased with that one-year improvement and is working hard for even more dramatic recycling accomplishments this year.

“Santee Cooper has always been environmentally conscious. Investment recovery is showing each employee how he or she can contribute to the overall success of Santee Cooper’s recycling efforts,” said Smith. “Our ultimate goal is to keep as much out of the landfill as possible. Not only does recycling make good business sense, it makes good common sense. We have an obligation to our children and future generations to protect the environment as much as possible.”

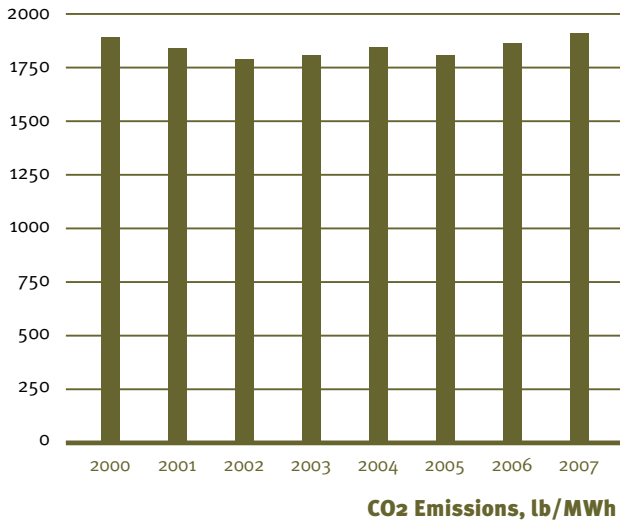
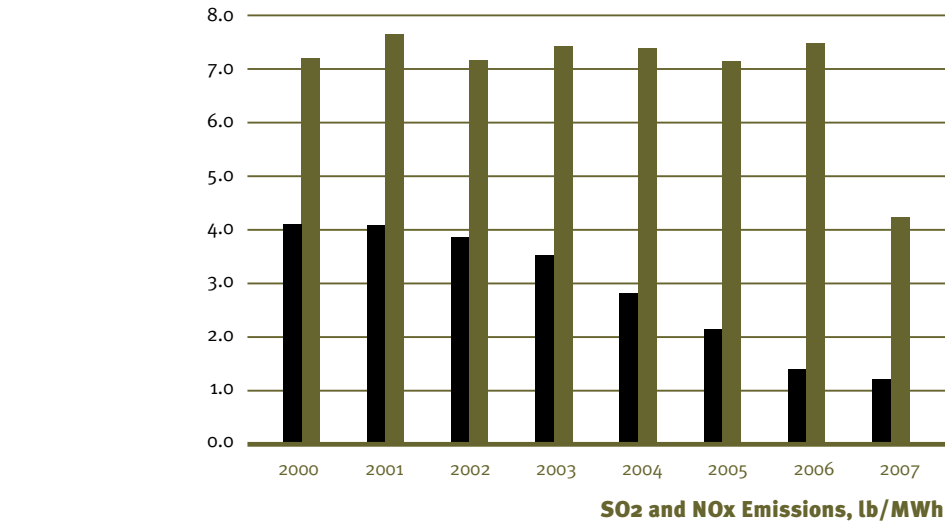
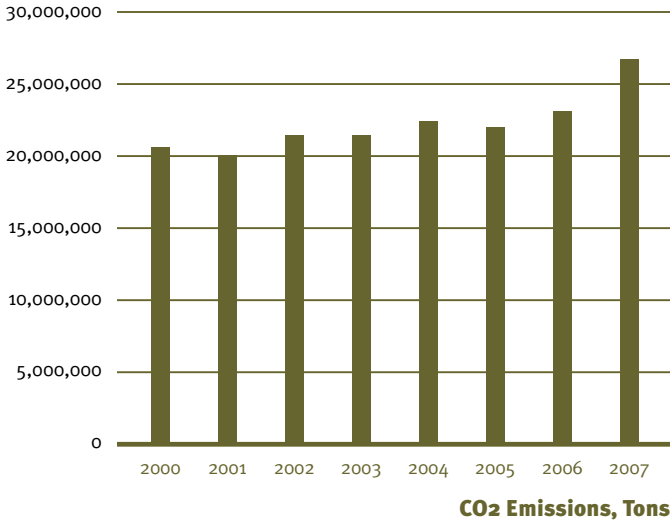
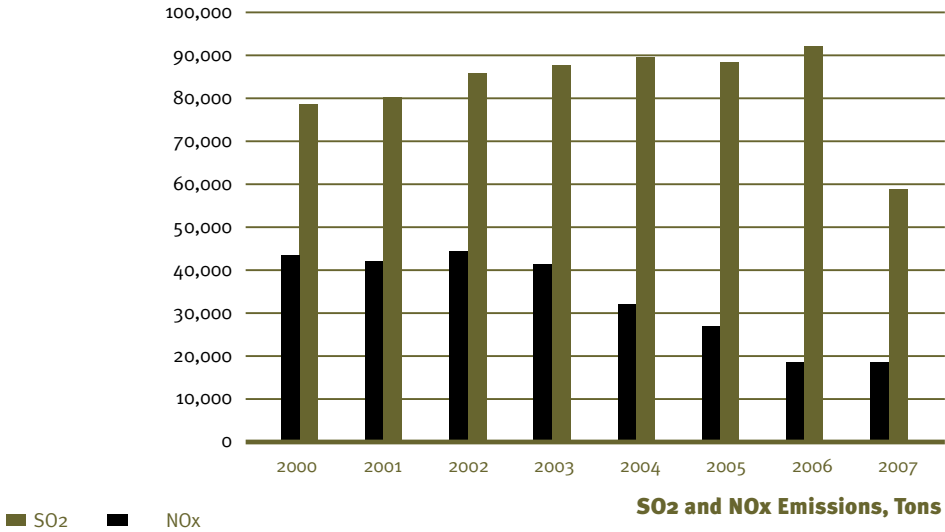


reportable  
results



MERCURY EMISSIONS DOWN

Environmental control technology installed at Santee Cooper units has enabled the utility to cut mercury emissions by 56 percent from 2000 to 2006, even while its generating capacity increased. (The data for 2007 will be available in July 2008.)



MORE EQUALS LESS

Santee Cooper has increased its generation, measured in terms of gigawatt hours, 20 percent since 2000 and 10 percent since 2006, with the Jan. 1, 2007 addition of Cross Unit 3. Even while it has added capacity, however, the utility has cut its sulfur dioxide and nitrogen oxide emissions significantly through the installation of advanced environmental control technology. Specifically, sulfur dioxide emissions have dropped 26 percent since 2000 and nitrogen oxide emissions are down 60 percent in the same period.

CARBON EMISSIONS CONSTANT WITH GENERATION

As Santee Cooper has increased its generating capacity, carbon emissions have risen accordingly. Carbon emissions rose 10 percent from 2006 to 2007, reflecting the addition of Cross Unit 3 to Santee Cooper’s generating fleet. Santee Cooper continues to support research into clean-coal technology aimed at reducing carbon emissions, most recently donating \$2.5 million to help launch a research center at the University of South Carolina that is focused on this goal.



## **SANTEE COOPER'S ENVIRONMENTAL POLICY**

The mission of Santee Cooper is to be the state's leading resource for improving the quality of life for the people of South Carolina. To fulfill this mission, Santee Cooper is firmly committed to protecting our environment. As such, Santee Cooper has developed the following

Environmental Policy statement:

Santee Cooper is committed to:

- › Compliance with all applicable federal, state and local environmental statutes, regulations, enforceable agreements, and permits, and
- › Continual improvement in environmental performance, through
  1. proactively seeking ways to enhance compliance,
  2. promoting conservation and renewable energy initiatives,
  3. minimizing environmental risks,
  4. promoting pollution prevention, and
  5. dedicating personnel, equipment, training, and materials for the comprehensive Environmental Management System.



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The mission of Santee Cooper  
is to be the state's leading  
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